

**MULTIPLE-SOURCE ARRAYS FOR CONFOCAL  
AND NEAR-FIELD MICROSCOPY**

Abstract of the Invention

- 5           A multiple-source array for illuminating an object including: a source of  
electromagnetic radiation having a wavelength  $\lambda$  in vacuum; and a reflective mask  
positioned to receive the electromagnetic radiation, the reflective mask comprising an  
array of spatially separated apertures, wherein each aperture comprises a dielectric  
material defining a waveguide having transverse dimensions sufficient to support one or  
10 more guided propagating modes of the electromagnetic radiation extending through the  
mask, each aperture configured to radiate a portion of the electromagnetic radiation to the  
object.

100440-0704  
F02220-2042F000